

CLAIMS

We claim:

1. A portable powered cleaning device, comprising:  
a housing;

5 a motor mounted in the housing so that a drive shaft  
of the motor extends adjacent a bottom opening of the  
housing;

a carrier coupled to the drive shaft through the  
bottom opening and mounted to the housing so as to  
10 reciprocate with respect to the housing when the drive  
shaft is moved;

a cleaning attachment removably attached to the  
carrier; and

15 a packet of a surface treatment composition disposed  
between the cleaning attachment and the carrier.

2. The device of claim 1, wherein the packet is  
water dissolvable.

20 3. The device of claim 2, wherein the packet is  
made of polyvinyl alcohol.

4. The device of claim 1, wherein the packet is  
perforated and includes a peel off layer covering the  
25 perforations.

5. The device of claim 1, further including a  
rechargeable battery disposed in the housing for powering  
the motor.

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6. The device of claim 5, further including a power switch electrically coupled between the battery and the motor.

5           7. The device of claim 6, further including an interrupt switch electrically coupled between the power switch and the battery.

10           8. The device of claim 1, wherein the carrier can reciprocate between about 2,500 and 10,000 cycles per minute.

15           9. The device of claim 1, wherein the cleaning attachment is generally triangular.

20           10. The device of claim 1, wherein the cleaning attachment is made of a material selected from the group consisting of: cloth, micro-fibers, rubbers, polymers, bristles and foams.

25           11. The device of claim 1, wherein the surface treatment composition is in a form selected from the group consisting of: liquid, gel, paste, solid and granular.

30           12. The device of claim 1, wherein the surface treatment composition is selected from the group consisting of: cleansers and polishes.

35           13. The device of claim 12, wherein the surface treatment composition has a chemical selected from the group consisting of: surfactants, solvents, chelants, biocides, builders, abrasives, polymers, pH adjusters,

bleaches, waxes, silicones, fluorocarbons, perfumes and dyes.

5           14. The device of claim 1, wherein the carrier includes a substantially rigid body coupled to the drive shaft by a bearing having an outer race fixed with respect to the carrier.

10           15. The device of claim 14, wherein the carrier further includes a plate attached to a bottom side of the carrier.

            16. The device of claim 15, wherein a foam layer is adhered to an underside of the carrier plate.

15           17. The device of claim 16, wherein a hook fastener is adhered to an underside of the foam layer.

            18. The device of claim 15, wherein a hook fastener is adhered to an underside of the carrier plate.

20           19. The device of claim 1, further including a lamp capable of projecting a light from a frontal area of the housing, the lamp being electrically coupled to a battery.

25           20. The device of claim 1, wherein the carrier is driven in an orbital path.

21. A portable powered cleaning device, comprising:  
a housing;

a flex mount fixed to the housing having at least  
one flexible elongated member;

5 a motor mounted in the housing and having a drive  
shaft;

a carrier mounted to the flex mount and  
eccentrically coupled to the drive shaft so that when the  
drive shaft is moved the carrier reciprocates in a plane  
10 essentially parallel to a bottom of the housing; and

a cleaning attachment removably attached to the  
carrier.

22. The device of claim 21, further including a  
15 surface treatment composition.

23. The device of claim 22, wherein the cleaning  
attachment is impregnated with the surface treatment  
composition.

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24. The device of claim 23, wherein the surface  
treatment composition has a liquid.

25. The device of claim 23, wherein the surface  
25 treatment composition is dry.

26. The device of claim 22, further comprising a  
packet containing the surface treatment composition and  
disposed between the carrier and the cleaning attachment.

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27. The device of claim 26, wherein the packet is  
water dissolvable.

28. The device of claim 26, wherein the packet is perforated and includes a peel off layer covering the perforations.

5 29. The device of claim 22; wherein the carrier travels in an orbital path.

30. A portable powered cleaning device, comprising:  
a housing having a lower opening;  
a battery powered motor mounted in the housing;  
a carrier coupled to the motor so as to reciprocate  
5 with respect to the housing;

a cleaning attachment removably attached to the  
carrier; and

a scrub brush having bristles external to the  
cleaning attachment and mounted to the carrier to be able  
10 to reciprocate therewith when the drive shaft is rotated.

31. The device of claim 30, wherein the scrub brush  
is detachable from the carrier.

15 32. The device of claim 30, wherein the scrub brush  
includes an elongated body disposed between the carrier  
and the cleaning attachment.

33. A portable powered cleaning device, comprising:  
a housing;  
a battery powered motor mounted in the housing;  
a carrier coupled to the motor to be able to  
5 reciprocate within a range of about 2,500 to 10,000  
cycles per minute with respect to the housing when the  
motor is activated; and  
a cleaning attachment removably attached to the  
10 carrier.

34. The device of claim 33, wherein the  
reciprocation range is about 2,500 to 8,500 cycles per  
minute.

15 35. The device of claim 34; wherein the carrier  
reciprocates between about 3,000 and 6,000 cycles per  
minute.

20 36. The device of claim 33, wherein the carrier  
travels about 2 to 30 millimeters when reciprocated.

37. The device of claim 33, wherein the carrier  
travels in an elliptical orbit.

25 38. The device of claim 33, further including a  
surface treatment composition.

30 39. The device of claim 38, wherein the surface  
treatment composition is contained in a packet disposed  
between the cleaning attachment and the carrier.

40. The device of claim 39, wherein the packet is  
water dissolvable.

41. The device of claim 39, wherein the packet is perforated and includes a peel off layer covering the perforations.

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42. The device of claim 38, wherein the cleaning attachment is impregnated with the surface treatment composition.

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43. The device of claim 42, wherein the composition is dry prior to use.

44. The device of claim 42, wherein the composition is aqueous prior to use.

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45. The device of claim 38, wherein the surface treatment composition is in a form selected from the group consisting of: liquid, gel, paste, solid and granular.

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46. The device of claim 38, wherein the surface treatment composition has a chemical selected from the group consisting of: surfactants, solvents, chelants, biocides, builders, abrasives, polymers, pH adjusters, bleaches, waxes, silicones, fluorocarbons, perfumes and dyes.

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47. The device of claim 33; further including a rechargeable battery disposed in the housing and electrically coupled to the motor.

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48. The device of claim 33, wherein the cleaning attachment is essentially triangular.



49. The device of claim 33, wherein the cleaning attachment is essentially rectangular.

5 50. The device of claim 33, wherein the cleaning attachment is made of a material selected from the group consisting of: cloth, micro-fibers, rubbers, polymers, and foams.

10 51. The device of claim 33, wherein the carrier further includes a plate attached to a bottom side of the carrier.

15 52. The device of claim 51, wherein a foam layer is adhered to an underside of the carrier plate.

53. The device of claim 52, wherein a hook fastener is adhered to an underside of the foam layer.

20 54. The device of claim 53, wherein the hook fastener extends along a side edge of the foam layer.

55. The device of claim 51, wherein a hook fastener is adhered to an underside of the carrier plate.

25 56. The device of claim 55, wherein the hook fastener extends along a side edge of the carrier.

30 57. The device of claim 33, wherein the carrier has winged sections extending out from opposite sides of the housing.

58. The device of claim 33, further including a scrub brush having bristles external to the cleaning attachment and mounted to the carrier to be able to reciprocate therewith when the drive shaft is rotated.

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59. The device of claim 33, wherein the carrier is flexibly and non-rotationally mounted to the housing.